

What is claimed is:

1. A method for fabricating a seal-integrated separator for a fuel cell, said seal-integrated separator including a separator body having a communication port, and seals which are integrated on both sides of said separator body and which are disposed around an electrode's reaction surface during use or around said communication port, comprising the steps of:

providing an upper mold having a groove positioned corresponding to said seal disposed on one side of said separator body, and a lower mold having a groove positioned corresponding to said seal disposed on the other side of said separator body;

holding said separator body between said upper mold and said lower mold; and

injecting melted seal material to form said seals into each of said grooves in said upper mold and said lower mold through separate gates respectively formed in said upper and lower molds.

2. A method according to claim 1, wherein said gate formed in one of said upper and lower molds communicates with said gate formed in the other of said molds via mating surfaces of said molds by a runner branching from said gate formed in the other of said molds.

3. A method according to claim 2, wherein said step of injecting melted seal material further comprises:

injecting said melted seal material into each of said grooves in said molds through a wraparound cavity formed between the periphery of said separator body and both of said upper and lower molds.

4. A method according to claim 1, wherein said gate is connected to a portion of said groove, said portion not forming a sealing surface of said seal.

5. A method for fabricating a seal-integrated separator for a fuel cell, said seal-integrated separator including a separator body, and dual seals which are integrated on both sides of said separator body and which are disposed, side by side, around an electrode's reaction surface during use, comprising the steps of:

providing an upper mold having grooves positioned corresponding to said dual seals disposed on one side of said separator body, and a lower mold having grooves positioned corresponding to said dual seals disposed on the other side of said separator body;

holding said separator body between said upper mold and said lower mold; and

injecting melted seal material to form said seals into each of said grooves in said upper mold and said lower mold through gates respectively formed in said upper and lower molds.

6. A method according to claim 5, wherein said gate formed in one of said upper and lower molds communicates with said gate formed in the other of said molds via mating surfaces of said molds by a runner branching from said gate formed in the other of said molds.

7. A method according to claim 5, wherein both of said upper and lower molds have a connecting cavity for forming a seal bridge connecting said dual seals to each other.

8. A method according to claim 5, wherein said grooves have a backup cavity for accommodating an excessively injected amount of said seal material.

9. A method according to claim 7, wherein said gate formed in one of said upper and lower molds communicates with said gate formed in the other of said molds via mating surfaces of said molds by a runner branching from said gate formed in the other of said molds.

10. A method according to claim 7, wherein said step of injecting melted seal material further comprises:

injecting said melted seal material into each of said grooves in said molds through a wraparound cavity formed between the periphery of said separator body and both of said upper and lower molds.

11. A method according to claim 10, wherein said gate formed in one of said upper and lower molds communicates with said gate formed in the other of said molds via mating surfaces of said molds by a runner branching from said gate formed in the other of said molds.

12. A method according to claim 5, wherein both of said upper and lower molds have a connecting cavity for forming a seal bridge connecting said dual seals to each other, and wherein a sprue is formed, which communicates with said grooves in each of said upper and lower mold from one of said molds via mating surfaces of said molds.

13. A method according to claim 12, wherein another sprue is formed in the other of said molds, and wherein gates communicating with said sprues in said molds are formed and connected to portions of said grooves, said portions not forming a sealing surface of said dual seals.